Implementation Plan for the Recruitment of a Diverse Workforce in Medical Research

By Dr. Harold Slavkin
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Background

Many Americans born into minority racial and ethnic groups experience disproportionately higher infant mortality, lower rates of childhood vaccination, later diagnosis of treatable neoplasms, higher prevalence of cardiovascular disease and diabetes, and shorter life spans than does the population as a whole. Awareness of the differences in disease burden between the majority population and Americans who are in minority groups or of lower socioeconomic status is growing. Moreover, as a result of the demographic changes expected over the next 50 years, a majority of Americans will be members of groups that have historically been medically disadvantaged.

Health disparities are due to a number of factors, including access to social and economic resources, level of education, environmental factors, and occupation. Efforts to reduce these health disparities have typically targeted individual subpopulations, such as low-income persons, racial and ethnic minorities, women, and persons with disabilities. It is now evident that reducing these disparities will require fresh approaches including (1) increased local, regional and national literacy in science and health to improve prenatal care, early childhood development, school readiness, and primary, secondary and postsecondary education; and (2) increased inclusion of minorities in the health and medical research professions.

There is general agreement that reducing health disparities is a national issue. Reducing disparities will require a long-term effort to develop innovative models for early childhood and K-12 education that will result in science, math and health literacy, and a number of strategies to increase a diverse workforce in medical research and the health professions. To contribute to this national agenda, the NIH Director charged a small group of Institute leaders to outline a program that could result in a significant and rapid increase in the diversity of the medical research and health professions workforce. The Committee for Recruitment of a Diverse Workforce in Medical Research (the "Slavkin Report") provided five recommendations to plan, implement, and coordinate NIH training programs that have the potential to reduce health disparities by fostering inclusion of affected populations in the health and medical research professions. These recommendations include:

- Create the NIH Academy
- Increase the Number of Scientists Addressing Health Disparities
- Enhance NIH Grant Supplement Awards
- Foster Linkages Between Research-Intensive and Other Institutions
- Coordinate, Publicize, and Evaluate Programs

Such training programs set amidst a wealth of scientific opportunities available today, and against the backdrop of growing public demands in this country, could increase the depth and breadth of the Nation's talent pool in health research in basic, translational and clinical studies. Up to now, decades of efforts to attract pre-college, undergraduate, predoctoral, and postdoctoral students to biomedical careers have yielded a paucity of minority investigators who engage in research. For example, Hispanics, African Americans, Native Americans, and Pacific Islanders represent

almost 30 percent of the total population, but are markedly underrepresented as students, researchers and academicians in the physical, chemical, biological and health sciences. There is an urgent national need for a diverse medical research workforce who can advance public health through scientific discovery, and for clinicians who can deliver the benefits of this research to an increasingly diverse American population.

The Committee recommendations address both recruitment and retention and propose a sustained and coordinated national effort to educate and nurture an outstanding, diverse, and competitive scientific workforce. The following Implementation Plan requires increased resources and a commitment to include individuals from many diverse backgrounds in the medical research enterprise. The Implementation Plan also requires coordination, cooperation and counsel between the various NIH Institutes, Centers and Offices, and between the NIH and partner organizations including, but not limited to, other Federal agencies, the Association of American Medical Colleges (AAMC), the American Association of Dental Schools (AADS), the Robert Wood Johnson Foundation (RWJ), the Howard Hughes Medical Institute (HHMI), the National Medical and Dental Associations (NMA and NDA), the National Hispanic Medical and Dental Associations (NHMA and NHDA), the American Association for the Advancement of Science (AAAS), and the Association of American Indian Physicians (AAIP).

Implementation Plan

The Implementation Plan should be realized as soon as possible. Specifically, Phase I and Phase II can both be done simultaneously. The full implementation with suggested planning grant activities could be realized in FY 2000 and beyond. The development, coordination and evaluation for the Implementation Plan needs to led by a trans-NIH effort with leadership consisting primarily of the NIH Director's Office for Research in Minority Health, representatives from each NIH Institute, Center and Office, and representatives from selected Federal and non-Federal organizations. The Implementation Plan will require four phases; with Phase I and Phase II being realized at the same time so that at least six months will be saved from the suggested timeline:

Phase I. Assessment and Design (6 months; could be "out-sourced" using a contract)
- Survey current NIH Supplements, Stipends, and Student Loans/Debt Programs
- Survey current programs from AAMC, AADS, RWJ, HHMI, NMA, etc., for "best practices"
- Assess target populations and regions of the Nation (set goals)
- Design menu with options for various recommendations

Phase II. Development (6 months in tandem with Phase I)
- Develop national student debt/loan forgiveness programs
- Market NIH intramural research training with student loan forgiveness
- Develop publicity announcements that address training and health disparities
- Develop diverse national/regional recruitment campaigns
- Present NIH Academy concept to various NIH Advisory Councils
- Develop or revise various "bridge grant" approaches
- Revise the General Supplements Program (NIH Guide revisions)
- Develop tracking mechanisms and coordination with various partners

Phase III. Implementation (FY 2000 and Beyond)
- Implement full program

Phase IV. Evaluation (FY 2001 and beyond)

- Assess campaign efforts
- Evaluate progress in reaching goals
- Assess/revise NIH Academy and other recommendations as required

Recommendation 1: Create the NIH Academy

The NIH Academy will serve as a nexus for recruiting and training a diverse population of scholars from high school to beyond doctoral studies as students pursue careers in the health sciences. The NIH Academy will serve as a model-training forum located initially at the Bethesda campus of the NIH Intramural Research Program. Under the leadership of Dr, Michael Gottesman, a group of scientists, administrators, and educators are presently planning an innovative training program that improves recruitment, training, and mentoring for a diverse new generation of scientists. The NIH Academy will emphasize a mentoring-intensive residential program with emphasis on coordination, continuity and local community involvement. Dr. Gottesman's planning group is making progress and the intramural NIH Academy may start as early as summer 2000.

To implement the NIH Academy in the extramural community will require a two-step process. First, we propose a trans-NIH planning training grant that will serve to market the concept and provide sufficient time and resources to enable academic health centers and related institutions to plan "NIH Academy" training programs suited to regional or local needs around the Nation. The Request for Applications (RFA) would be drafted and released in FY 2000 and planning grants would be reviewed and funded in FY 2001. Based upon National demographics, we propose that at least 30 one-year planning grants be funded at $100,000 each (estimate $3 million). In FY 2002, competitive NIH Academy training grants would be reviewed and funded (support includes NIH Academy fellowships, housing, tuition, travel, and other related program costs). The general guidelines for "NIH Academy" programs include the critical elements found in the Committee Report, along with "best practices" suggested by a number of NIH Institutes, the RWJ Foundation, HHMI, and the AAMC.

Recommendation 2: Increase the Number of Scientists Addressing Health Disparities

The goal of this recommendation is to develop and strengthen the biomedical, clinical and behavioral health research capacity of the nation by expanding training and research opportunities for scientists in underrepresented groups through partnerships. Recruitment efforts will target Historically Black Colleges and Universities (HBCU), Tribal Colleges and Universities (TCU), Hispanic Serving Institutions, those institutions that primarily serve individuals with disabilities, and other institutions the majority of whose faculty and students are from underrepresented groups. The NIH will identify, recruit and train highly talented individuals who have completed clinical and postdoctoral programs and possess a strong interest in reducing disease disparities. Particular emphasis will be placed on recruiting culturally sensitive, under-represented minority, disabled, and economically disadvantaged individuals.

This National recruitment effort has several important advantages: (1) It would begin to yield results in as little as five years because it focuses on individuals who have already completed clinical residency or postdoctoral programs; and (2) Additional talented individuals may also be attracted into the field by expanding and raising the visibility of scientific opportunities associated with health disparities by making these areas of special budgetary emphasis.

These individuals will be drawn from the behavioral, environmental and biological doctorate programs and clinical residencies in the health sciences, including medicine, dentistry, pharmacy, nursing, laboratory animal medicine, and allied health professions. Recruitment efforts should be in collaboration with organizations such as the AAMC, AADS, HHMI, and the RWJ Foundation.

The goal is to identify and recruit the most promising clinical residents and postdoctoral fellows. The program provides clinical research training and subsequent support, including bridge and start-up grants to enable recently trained individuals to become established within academic health science centers. Existing trans-NIH programs such as the K23, K24 and K30, and the newly developed bridge grants that are provided by several Institutes (such as the K21), can be "revised" and used to implement this recommendation. Because such mechanisms are in place, implementation requires increased national marketing, increased emphasis and coordination, an evaluation component, and trans-NIH commitments for additional funds.

Based upon the numbers of individuals currently in the clinical residency and postdoctoral fellowship "pipeline," this effort should identify and recruit at least 30 people per year beginning in FY 2001 (or sooner). Targeted groups could include participants, for example, from the AAMC's Minority Faculty Career Development Seminar program, postdoctoral biomedical, behavioral and environmental fellows who meet the eligibility criteria, and potentially applicants of the RWJ Generalist Physician Faculty Scholar's Program who meet the eligibility criteria.

Recommendation 3: Enhance NIH Grant Supplement Awards

Replace the current minority/disability-directed programs with a General Supplements program, and make it available to all of our nation's talent in science, particularly disadvantaged individuals of any race who traditionally might not have had such opportunities. This broadened program should monitor and evaluate participating students and mentors. The historical under-utilization of the minority and disability supplements programs, as reported by the Committee for Recruitment of a Diverse Workforce in Medical Research, is the basis for this recommendation to expand the supplements program to include all disadvantaged individuals. "Disadvantaged" refers to individuals who qualify for the previous Disability Supplements Program and/or those who have been socially and/or economically disadvantaged.

The "Eligibility Criteria" for the revised Grant Supplement Awards should be as follows:

High School Students:

- Any high school student enrolled in a Title III institution and/or who is a member of a group that bear a disproportionate burden of disease as reported in the 1985 Heckler Report, Healthy People 2000, and in Healthy People 2010 is eligible for the General Supplements Program. The overall universe of high school participants should reflect the spirit of the 1993 NIH Revitalization Act.

College/University Undergraduates:

- Members of groups that bear a disproportionate burden of disease as described above, recipients of "Pell" Grants (and/or Federal Supplemental Education Opportunity Grants) are eligible for the General Supplements Program.

Post-Baccalaureate Graduate School or Professional School Students:

- Any graduate student (Master's degree, Ph.D., M.D., D.D.S., etc.) who is a member of a group that bears a disproportionate burden of illness and disease as reported in the 1985 Heckler Report, Healthy People 2000 and in Healthy People 2010, are eligible. Graduate students who would be trained on NIH funded projects in the special emphasis area of health disparities are also eligible.

- Recent recipients of the doctoral or an equivalent health professional degree who are members of groups that bear a disproportionate burden illness and disease as described above are eligible to participate in the General Supplements Program. Recent recipients of the doctoral or an equivalent degree who would be trained on NIH funded projects in the special emphasis area of health disparities are also eligible.

College/University Faculty Members:

- Any faculty member at minority serving institutions that have a demonstrated interest in developing a research program in health disparities and/or who qualifies for one of the "K s is eligible.

The Committee recommends expanded and "targeted" regional publicity for the program to include Internet, public service announcements using culturally appropriate radio and television media, brochures distributed and targeted to specific high school and university faculty advisors, and active information programs such as those projected from the NSF, AAMC, HHMI and RWJ Foundation, as well as the NMA, NHMA, NDA, NHDA and numerous scientific associations, in addition to publicity efforts already underway at NIH.

Recommendation 4. Foster Linkages between Research-Intensive and Other Institutions

The NIH should increase efforts to establish bridge grants, similar to those already existing in a number of Institutes, which will fund collaborations between research-intensive universities and nearby institutions that serves predominantly minority populations. The goal of these efforts would be to offer a diverse group of students and faculty members the opportunity to collaborate. These efforts need to "target" specific regions and institutions that educate a disproportionate number of disadvantaged students.

The National Institute of General Medical Sciences (NIGMS) administered a "Bridge Program" and the new Office of Research on Minority Health (ORMH) and the National Cancer Institute (NCI) pilot initiative with minority medical schools and NCI designated Cancer Centers, currently under development, are excellent examples of ongoing "bridge" activities sponsored by the NIH.

The National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) "Special Initiatives for Faculty of Institutions with Substantial Minority Enrollment" (S-11 mechanism) provides another innovative approach to foster collaborations and mentoring between promising scientists in institutions with substantial minority enrollment and highly accomplished and well-established scientists/mentors in research intensive universities.

The National Institute of Dental and Craniofacial Research (NIIDCR) "Regional Research Centers on Minority Oral Health" has been in existence since 1992 and represents a model for partnership between a minority dental or medical school or an academic institution serving a large

minority population and an academic institution that has proven expertise in the design and conduct of biomedical and behavioral health research.

Implementation plans will benefit from an assessment of the design of various NIH activities currently "in progress" such as created by National Heart, Lung, and Blood Institute (NHLBI), National Institute of Allergy and Infectious Diseases (NIAID), National Institute of Neurological Disorders and Stroke (NINDS), National Institute of Environmental Health Sciences (NIEHS), National Institute of Child Health and Human Development (NICHD), National Center for Research Resources (NCRR), and other Institutes and Centers.

Recommendation 5. Coordinate, Publicize, and Evaluate Programs

A number of Federal and non-Federal organizations are dedicated to creating a diverse science, technology and health workforce for the 21st Century. However, all too often there is a lack of coordination, leveraging between programs and evaluation. To implement this recommendation, it is essential to identify leadership at the NIH to survey the Institutes, Centers and Offices as well as other Federal, state and non-profit organizations engaged in science and technology for the purpose of identifying successful training programs that are aimed at increasing a diverse science technology workforce for the 21st century.

As mentioned previously, the Implementation Plan is divided into four phases. Phase I "Assessment and Design" can provide a detailed survey of the theory and practices of the various programs, assess the target student populations, and design a matrix that provides coordinating of these disparate activities. Using a coordinating contractor might be most effective to realize this recommendation. The leadership for coordinating, publicizing and evaluating programs designed to increase a diverse science technology workforce for the 21st century should reside in the NIH Director's Office for Research in Minority Health, with representatives from each of the Institutes, Centers and Offices, and representation from selected federal and non-federal organizations. This broad participation should enhance the functions, authority and responsibility to coordinate and provide oversight of minority-related research and training programs throughout the NIH.

Summary

Reducing health disparities will require multiple approaches including (1) increased local, regional, and national literacy in science, technology and health, to improve prenatal care, early childhood development, school readiness, and primary, secondary, and post-secondary education; and (2) increased inclusion of historically underrepresented minorities in the health and medical research professions. The NIH is well suited to plan, implement, and coordinate training programs that have the potential to reduce health disparities by fostering inclusion of affected populations in the health and medical research professions. There is an urgent national need for researchers who can advance public health through scientific discovery and for clinicians who can deliver the benefits of health research to an increasingly diverse American population.

July 20, 1999

TO: Dr. Harold Varmus
Director, NIH

FROM: Director, NIDCR

SUBJECT: Implementation Plan for the Recruitment of a Diverse Workforce in Medical Research

Attached please find the Implementation Plan for the Recruitment of a Diverse Workforce in Medical Research for your approval. Please indicate your approval on the decision lines below.

If you have any questions or concerns, please feel free to contact our office.

Harold C. Slavkin, D.D.S.

Approve _____ Date _____

Disapprove _____ Date _____